



Dedicated to the Conservation of
Virginia's Wildlife and Related Natural Resources
and to the Betterment of
Outdoor Recreation in Virginia

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An Uphill Struggle

AS indicated in the message on our back cover, an ever increasing segment of our population is losing real contact with the outdoors. As a matter of fact Congress almost didn't designate September 27 as National Hunting and Fishing Day 1975 because some didn't consider it important enough. In some cases even the children of current outdoor fans aren't getting the types of experiences that will make them love and appreciate the outdoors as their parents do.

Most of today's crop of outdoorsmen either grew up on farms or frequently visited relatives or friends in the rural sector allowing them opportunity to get acquainted with nature at an early age. Today, many children have parents who are not nature oriented. A large number of those living in central cities get their nature education from television, books and the classroom, none of which are necessarily well balanced or totally accurate. Worse yet, they often do not kindle the type of interest that will lead these people to learn more on their own. The old saying, "A little knowledge can be a dangerous thing," is the basic truth behind much of the energy now being wasted in the conservation field. People need not only to be interested and active but to know whereof they speak.

National Hunting and Fishing Day is a unique opportunity to provide an educational experience for these persons that might change their attitudes toward the outdoors. But on a personal basis each of us needs to continue this philosophy throughout the year. Don't wait until those children are big enough to pack a gun before you take them hunting or at least introduce them to the wonders of woods and fields. Don't wait until the youngsters are big enough to take fishing seriously before you take them fishing. By then they may not be interested. Ask a neighbor to accompany you on a fishing trip or to spend a weekend sharing the fellowship in a deer camp. People usually only fear and dislike what they do not understand. And since hunters and fishermen are often not even understood by their wives, we have a long way to go. — H. L. G.

Stop Illegal Use of Damage Stamp Monies JUDGING from the July Virginia Wildlife editorial, it appears that counties requiring a damage stamp are using it as an excuse for obtaining funds used for purposes other than those they are meant for. This should be unlawful.

In recent years a herd of elk were killed in the Bland County area because they were eating farmers' corn. How much better it would have been for Bland County to have paid the farmers for their corn and left the elk (a memento of our great American heritage) alone.

To make sure damage stamp money is used properly, I suggest issuing a state-wide damage stamp to be purchased with the regular hunting license. The money should be kept in Richmond; each county submit a statement for damage; and the office in Richmond send the money to that county.

Why not take the money left over at the end of each year and buy corn for the farmers to plant to feed the elk, deer and other animals? Let's preserve these animals and not needlessly kill them because they do damage that the hunters who buy licenses have already paid for. Stop the illegal use of damage stamps! The hunters intend this money for the good of the animals and it should be used that way!

Mrs. John J. Robertson Dublin

Damage Stamp Funds Needed

I do not agree with the viewpoint expressed in the letter published in the "Damage Stamp Denounced" article. It is true that this revenue or stamp is imposed only on hunters and that this money should be used only for game propagation and damage done by deer and bear, especially deer. A number of farmers do have extensive damage to their crops and deserve reimbursement. The damage stamp is the only source of money available for this purpose. Though this money in some counties may be wrongly or unwisely used (that is, not to the advantage of hunters and game), if farmers have extensive damage by deer for which they are not reimbursed, they might start wholesale shooting of deer.

It is the responsibility of the county's governing body to distribute the money so that it will be used correctly. In Grayson County, farmers who have damage file their claims with county supervisors, the damage is assessed and the farmer is paid a reasonable amount. After all damage claims have been satisfied at the end of the year, surplus damage stamp money is equally divided and distributed over the county; committees are appointed and game is purchased for restocking purposes. This system works satisfactorily, and I sincerely hope that the damage stamp system will not be abolished.

Fred A. Robbins
Elk Creek
Member, Elk Creek Valley Game & Fish
Protective Association



THEY crouched in the foxtails, millet and scattered cornstalks. They stood frozen like wax dummies behind and beneath small oaks, hickories and dogwoods dotting the roadsides. From time to time some gingerly shifted positions along the edge of the hardwood woodlot. One group sat bunched under a large oak. For the most part, they came clad in green camouflaged fatigues, or in any other dark garb designed to conceal their presence from above. Some brought stools; others remembered to bring gallon thermos containers filled with something cold to drink.

Embraced by verdure, all waited: waited for the gray ships to come in. Soon doves in small packs arrived in spurts, loping above treetops searching for food. When they came, hunters popped up like periscopes out of the thick grass, or swung out from behind clumps of leaves directing their batons in a staccato fusillade.

And then there was more waiting. Four friends sat beneath an oak tree. The conversation had begun about dove shooting, but, as conversations are apt to do, soon flowed to deer hunting and evaluations by the hunters about the biggest deer they had ever "heard tell" of being killed in these parts. Engrossed in these speculations, the quartet failed to notice a dove whizzing past them 30 or so feet away.

"Darn," cried one old-timer, a pipe emitting smoke

beside his stout face. "We let that one get away. Here we were talking instead of shooting."

"Well, you're not supposed to kill all the dove around here," remarked a younger companion with a chuckle. "You're supposed to leave some for the season."

"Well, I just like to shoot at them anyway," the first one said with a grin.

This was a scene during one of this writer's latest experiences afield in quest of the wilv dove.

September is the time for all good hunters to drop their "depth charges" on these submarines of the sky. The dove season is generally acknowledged to be the time of the year when sportsmen expend the greatest bulk of their shotgun shells. In no other hunting endeavor is the small game sportsman given a better opportunity for making amends for missing the ones that got away.

This writer's quest with these gray-feathered speed merchants has been confined, for the most part, to the agricultural fields of Virginia. Whenever opening day of any season approaches, hunters many times look back to the season when they first tried their hand at shooting the game. In 1967, I was introduced to dove hunting in Pittsylvania County. I soon discovered doves can be as difficult to sight-in as they are, at times, numerous. In fact, had Noah released his doves that opening day, they would have returned to

the Ark at sundown unscathed, perhaps bearing the report of the plight of at least one nimrod who tried to bring them down.

It doesn't take one long to discover the intricacies of dove hunting and the behavior of these creatures. As we were arriving at a Pittsylvania County farm on my first opening day, we spotted several bunches of this pigeon-like bird swarming into the woods and others flying out. During the next two hours, we were to see an estimated 300 to 400, coming and going ceaselessly. There were lulls of five minutes or so, but the lulls were infrequent.

Because it was the first time in several months they had hunted, my compatriots succumbed to the malady called "itchy finger." The car had hardly stopped before they had piled out of it shooting; shooting, it seemed, even at mere specks in the sky. As the report of each shot was voiced, the doves' flights would abruptly change direction as if they had become victims of sudden gushes of harsh winds. I also became aware of the importance of concealment. If you are not concealed and a dove sees the movement of your gun, it may well veer off its path.

At first, I stationed myself along the border of the woods next to a cleanly cut field. My presence was hidden from those birds coming out over the trees. Although the birds were unaware of my presence until they were fast above me, I was ignorant of their arrival except at a second's notice, and by then - inexperienced as I was - it was too late for me to fire. I had sacrificed preparation for concealment. Time to prepare for shooting is hinged on the fact that doves are silent flyers. At times one may hear their wings twitter as they take off, but once airborne these brownish-gray creatures are as submarines in enemy waters.

And so, the trick is to station yourself where you can be hidden and still have time to prepare to shoot. I moved into a tobacco field and stood amid seven-

Favorite dove food: browntop (left) and German millet.



foot tassled stalks. Here I could spot them coming from afar.

It became a game of geometrics. The frustration about recurrent failure is the fact one does not learn from mistakes here. Only by downing a bird, only by success, can a neophyte learn how to be correct. Failing to hit a bird is certain, but the degree by which you fail to hit a bird is impossible to discern, and if you cannot know the degree by which you miss a shot, you cannot know how much closer to success you are getting.

But the outing was not for nought. I finally did drop two birds. It took a box and a half of 20-gauge shells, but two did bite the dust. One kill was rather festive. As the bird approached, I kept close beside "my" tobacco stalk. As it got about as close as it ever was going to get to me, I shot at about 11 o'clock, leading very little, maybe by a foot. The bird exploded bits of feather and then dropped into one of the rows, spinning like one of those little wheels on a stick you can pick up at a county fair. The other bird I felled as it was zooming into the woods about ten feet off the ground. Here I led him by six feet.

In subsequent seasons I returned to this Pittsylvania farm, from time to time, enjoying moderate success. There were those dry spells when doves are few and far between, especially near the end of seasons. These are the times when you wait, wait and wait. At times you want a bird to come by so badly that gnats and bugs which fly about your face may fool you, for a split second, into believing a silhouetted dove is approaching from the distance. Several times I have recalled lifting my gun in an involuntary reaction to a bug flitting near my eye. It is at times like this that I've been sorely tempted to shoot doves off power lines.

My most memorable "sinking" of a "submarine" came while I was lying flat on my back. I had taken my wife out with me that day to show her how it's done. But the birds were sparse, the bulk of them having migrated to other parts. After a couple hours of fruitless scanning of horizons we sat down, more or less just to rest and enjoy being out. Then I spied two doves high in the sky - they must have been 200 feet up, maybe farther. At any rate, they looked tiny. Just for a lark, I loaded my single-barrel 20-gauge and lay on my back, on a slight slope, watching them approach directly overhead, or nearly so. When they did, I let 'er rip. Seconds later, to my amazement, one of the birds began to plummet - in that same spinning fashion. It seemed a half hour before it plopped to the ground, 50 feet away.

As we were leaving that Pittsylvania farm, we came upon the landowner who remarked he had never seen a dove brought down from such a height. I'm sure that from now on, any shot that nets me a dove will seem anticlimactic to this.



HE Commonwealth is about to embark on a mansized project - classification of its trout streams. Though not all would be considered trout habitat, several thousand streams will have to be surveyed in order to discover which will support trout. We are interested primarily in cataloging "native trout" streams; secondarily, in those streams which have potential for the put and take trout stocking program.

Why classify trout streams? For protection and preservation of trout streams. Stream fisheries are continually being lost or severely damaged, usually due to physical disturbance of the watershed. Much of this loss is due to stream channelization carried out for flood control purposes or as a part of highway construction and road relocation. In the process of channelization, as stream beds are straightened and relocated, pools and other types of cover are destroyed, leaving no place for trout to find refuge from high water velocity during periods of flooding or in which to hide from predators.

Streams are also lost by other land uses which result in the sedimentation of stream beds. Sedimentation can come from various sources such as cropland runoff. strip mine activity and road construction. The effects of sediment on the biology of a stream are many. One effect is that silt fills the spaces between and under rocks on the stream bottom needed as home sites for many insects, crayfish and other organisms which make up the food supply for trout. Thus the food supply is reduced through a loss of habitat for these organisms. Sediment also has a deleterious effect on reproduction. A heavy silt load in a stream can smother trout eggs by covering the eggs which are deposited in stream-bed gravel, thereby inhibiting the transfer of oxygen from water to eggs. Sedimentation may result in reduction, or in some instances complete elimination, of trout food organisms and trout reproduction.

Quite often these losses can be reduced or eliminated by cooperation between the various agencies involved. First, however, streams need to be classified and some

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Classifying Virginia's Trout Streams

By ROBERT E. WOLLITZ Supervising Fish Biologist

type of value placed upon them. When this is done, for example, we will be able to say this is a valuable wild trout stream and do not recommend channelization or other disturbances which may damage the stream. Possibly we can say that the stream is of little value in supporting a fishery and that certain types of watershed disturbance will be permitted along prescribed guidelines.

A classification of trout streams will also be of inestimable value in assigning water quality standards, thereby protecting the streams from various types of industrial and domestic pollution. But before any of this can be done, we need to locate the streams and determine their quality.

The second reason for classifying our trout streams is to be able to more effectively manage our trout program. Presently, the backbone of Virginia's trout program is put and take stocking of over 1,000,000 trout annually in streams varying from marginal trout-small-mouth bass water to prime trout water.

Another type of management is put-grow-and-take: trout are stocked as sub-catchables (usually 5-6 inches) in various waters and over a period of time grow in the wild and are taken by anglers after reaching catchable size (usually over 10 inches). Probably the most successful examples of this program are Hidden Valley Lake in Washington County and Laurel Bed Lake located on the headwaters of Big Tumbling Creek in Russell County. Two-story reservoirs such as Philpott Reservoir in Franklin County are also managed in this fashion. In this type fishery warmwater fish occupy the upper, warmer areas of the lake while trout occupy the



VIRGINIA WILDLIFE



Commission photo by Harrison

deeper, colder regions; thus the name two-story. Certain streams have also been utilized under this program and have produced some prime brown trout catches. Notable among these streams is the Smith River downstream from Philpott Reservoir.

A third type of management consists of the Fee Fishing program at Big Tumbling Creek, Douthat Lake and, in the near future, Crooked Creek in Carroll County. In this program trout are stocked regularly each week throughout the period beginning the opening day of trout season and ending on Labor day. Fishing is permitted on these areas after the purchase of a daily \$1.00 permit in conjunction with a valid fishing license. No trout license is required. However, after Labor Day these areas revert to regular trout fishing regulations and a trout license is then required.

Catch and release or "fish for fun" streams, wherein trout are caught for sport and then released to be caught again on a later occasion, represent yet another management technique. Perhaps the best known of these streams is the Rapidan River in Madison County. Other catch and release streams include Big Cedar Creek in Russell County, Little River in Floyd County and Snake Creek in Carroll County.

A fifth segment of our trout program would be the management of wild trout water. This might involve special regulations to prevent over-fishing of these areas, a possible realignment of our put and take program. An additional method would be to reintroduce trout to streams that have lost their trout population due to some type of stream degradation but are again suitable for raising and supporting trout. In order to carry out these objectives, however, we need knowledge concerning the location of these streams, their overall quality and potential. This is where the classification system comes in.

In order to classify our trout streams, two crews of college students will be sent out to visit each trout stream in the state. These crews will be under the supervision of a fishery biologist. One crew of two men will be responsible for surveying most of the streams. These men will walk a mile or more of stream and will fill out a form designed to yield information concerning stream ownership, acessibility, air and water temperatures, number and size of pools and riffles, flow of water, bottom type, relative amount of siltation, color of water, type of land surrounding the stream such as pastureland, woodland, etc. They will note type of bank cover, fish cover in the stream, whether or not the stream has been channelized and chemistry of the water. In addition, they will determine the presence or absence of trout in the streams, usually by means of a small back-pack electrofishing apparatus.

The other crew will consist of four men responsible for gathering sufficient information to make an estimate of the streams' productivity. They will complete the same survey form as the two man crew; but in addition, they will sample the fish population of selected streams in such manner that an estimate of the number and weight of fish each stream supports may be computed. They will also obtain samples of food organisms present in the streams - insects, crayfish, etc. - in such manner that an estimate of the quantity of trout food organisms present in the stream can be made. This information will enable the Game Commission to estimate the productivity of other trout streams having similar physical and chemical characteristics. This information will then be used to determine the type of management practice to be employed on each stream. From this information it will be possible to classify the stream according to the stream classification plan. (Continued on page 19)

SEPTEMBER, 1975

When the Grapes Get Ripe

By SANDRA S.
MEADOWS
Newport News



N late summer my family begins looking forward to our annual wild grape-picking expedition. By the first week in September we are asking each other who can remember when the grapes were ripe last year. Naturally, none of us can ever remember the exact date, and even if we could wild grapes don't ripen at the same time each year. Generally, I end up searching for the bottle of dated antihistamine pills the doctor prescribed for me the year I got 482 chiggers and fifteen ticks, along with our bucket of grapes.

Depending on the weather and the amount of rain, wild muscadine grapes ripen between the first of September and the first of October. So we pick a cool Sunday at approximately the right time, usually the middle of September, and head for the woods. Little preparation is needed to go grape picking. A picnic lunch, an empty bucket, long pants and long-sleeve shirts, and a can of bug spray are sufficient. The most important consideration is having a place to go.

We trek through woods frequently - there are so many fine things to see in the early fall. One day, looking for some pre-season deer sign, we found our grapes growing in profusion, vines winding up into pines, hollies and dogwoods. Each year we go back to the same spot. Some years the crop is good, other seasons it is bad, or the wildlife has beaten us to the purple jewels.

Because September in tidewater Virginia and sur-

rounding counties is still quite warm, we never enter the woods haphazardly. Chiggers and ticks are abundant, and snakes might be coiled under a fallen log, or basking in a sunny spot. We spray our clothing and exposed skin with bug spray, and cut snake sticks *poke around underbrush and rotten logs, before we step.

Fear of ticks and snakes should never keep people out of the woods. More often than not a snake will hear approaching footsteps and slither away with amazing speed. A quick check of the hairline and skin will usually turn up any ticks, which can then be removed. But with copperhead snakes and timber rattlers being native to our area, and ticks being the source of Rocky Mountain spotted fever, precautions are only sensible.

This year we went to look for grapes the second week in September; it's a good thing we didn't wait any longer. They were abundant and ripe - hanging in plump, purple clusters. Seeing them activated our taste buds, and our brains directed the first few grapes to waiting mouths instead of waiting buckets.

Stooping, we searched the ground underneath vines for fallen grapes. Our boys took great delight in finding them before we did. Each grape was exclaimed over - how big, how sweet, or sometimes, how an animal had sucked out the juicy meat and left the skin lying on the ground to fool us. We crawled under low-hanging hollies and got caught in the prickly

leaves. We scratched up pine straw to find the grapes which had settled in the cushioned mulch. We carefully retrieved ones that had rolled under twigs and fallen branches, poking first with our snake sticks.

After we picked those on the ground, my husband shook the vines. The rest of us stood guard in a ring around the tree in which the vine was growing. As he shook we listened for the grapes to fall, watched where they landed, and sometimes yelled as they hit on our bowed heads or backs. When they stopped falling we picked them up off the ground, ate a few, and put the rest in our buckets. Satisfied that there were no more ripe enough to fall, we would move on to the next vine and start all over again.

In places the grapes were growing low enough for us to pick right off the vines. It was lovely to stand in a quiet pine glade and pick sugar sweet grapes, but it was more fun to shake the vines and hear them falling, or search beneath massive trees for the purple fruit.

We saw frequent signs of wildlife - droppings which indicated that rabbits had been feasting on God's bounty, or small indentations in the pine needles where deer had stood to feed. We saw huge black crickets, which seem to have disappeared from newly mown lawns, due, I suppose, to so many fertilizers and insecticides.

If we are lucky, we see Indian peace pipes, grayish-white and beautiful, pushing through moist woods mould. This year we were too early to find any. I felt a keen disappointment that we missed my favorite wild flower, which always brings back good memories of childhood walks with my father. This year we saw



no snakes, but in years past we have seen a few. Viewed from a distance they are fascinating, and our sons are always little-boy thrilled to see one slithering off through the underbrush. We have only seen harmless black or king snakes, or small ground snakes. However, Virginia has poisonous cottonmouth moccasins and coral snakes, in addition to copperheads and timber rattlers.

In less than two hours we had enough muscadines for jelly, the hour was growing late, and our city muscles were tired. We always hate to end our grapepicking forays, knowing it will be a full year before it is time for another one.

The next day my work was cut out for me. I had jelly to make - jelly that store-bought preserves cannot compare with. After washing the grapes well and picking out sticks and pine needles, I put the fruit on to boil, using only enough water to cover it. I boiled the grapes about fifteen minutes, crushing them as they cooked, to extract the juice. The smell of cooking grapes was almost intoxicating, but it permeated my house with an odor far superior to artificial household sprays.

After the juice was extracted and strained, I added three-fourths to a cup of sugar for each cup of juice, working with only four cups of liquid at a time. I don't use pectin because it gives jelly a commercially prepared taste. Unripe fruits and berries contain natural pectin and some underripe grapes should be included in each batch being cooked. The sweetened juice must be cooked at a rapid boil for about thirty to forty-five minutes.

While the juice boils, I also boil jars. When the jelly begins to sheet off of the stirring spoon, instead of dripping off, I know it's ready. Experience is the only teacher in knowing when the jelly has been cooked enough. When it is done, I skim the froth off the top and pour it into hot jars. I seal them immediately and listen for the pop which tells me the seal is tight.

I don't store my jelly right away because I enjoy looking at it - its color is rich, the taste is delicious, and my satisfaction soars.

Some Sunday morning this winter when I open a jar of wild grape jelly for breakfast, it will provide a happy topic of conversation, as we all remember what fun we had picking muscadines that cool day back in September.

Musky fruits in small clusters characterize the muscadine, a grape of the southern U.S.

Commission photo by Kesteloo



OW that the heat of summer is waning, recreationists will be invading the fall countryside in droves to enjoy its pleasures. Hunting, fishing, hiking, camping and just leisurely walking through the woods or along deserted beaches are attracting many people who just want to get away from the typical crush. A large number of these new converts to the outdoors are realizing the advantages of topographic maps - "Pictures of Virginia" - for plotting routes of travel and maintaining knowledge of their position while in the Old Dominion.

By showing shape and elevation of terrain and by delineating a wide range of natural and man-made features in detail, topographic maps are particularly useful to vacationers who want to get away from the "beaten path." The most up-to-date series, the 1:24,000 scale, where one map inch equals 2000 feet on the ground, depicts about sixty square miles of the great outdoors. In addition to showing a "3-D" picture of the terrain using contour lines, the maps depict most trails, isolated mountain campsites and maintained public use areas. Most state and federal parks, forests, game management areas and wildlife refuges are outlined.

The sightseer/history buff will find topographic maps of value. Major battlefields preserved within the National Park system for the Revolutionary and Civil Wars are shown. Topographic maps provide an excellent overall view with which the average visitor can more easily visualize what happened, why it happened and the important role terrain played in the major engagements that shaped our nation.

Those active folks who enjoy hunting and fishing will find topographic maps of great value in making their foray a success. Though maps cannot pinpoint where game is present, they do indicate covered woodlands and isolated meadows where deer, turkey

KEY TO YOUR PRIVATE UTOPIA

By H. W. WEBB, Geologist Virginia Division of Mineral Resources

and other game animals are usually found. Swamps and marshes, which are the haunts of duck, beaver and muskrat, are clearly identified with appropriate symbols. The bottom configuration of some lakes and reservoirs is shown, which aids in location of inundated stream channels, former wooded areas and buildings where fish are commonly present.

These "Pictures of Virginia" are available in several series and can be easily folded to a convenient, useful size. There are 805 of these 1:24,000 scale quadrangle maps needed to portray the Commonwealth. each of which sells for 78 cents (prices include 4 percent State sales tax). Within the continuing revision program to keep these maps up to date those photorevised show uniquely in purple growth features. Other map series which may be of interest include a set of three maps for \$3.12 (scale 1:62,500; one map inch equals about one ground mile) depicting Shenandoah National Park; the United States Series maps prepared at a scale of 1:250,000 (one map inch equals about four ground miles; 14 separate maps are needed to show the Commonwealth), each costing \$1.04; and a shaded relief map of the entire state on a scale of 1:500,000 (one map inch equals about eight ground miles) for \$2.08.

Within a pilot program to make available the latest innovations from the map maker the following new types of map products are available: orthophotoquads and county map. Orthophotoquads are aerial photographic depictions of the 1:24,000 scale topographic map areas on which scale measurements can be made. Differentiation of coniferous and deciduous tree types, interpretation of land use and delineation of fields can be determined from these. Optimum information on the land surface can be obtained by comparing the orthophotoguad with its corresponding topographic map. Those quadrangle areas for which orthophotoguads are available include Charlottesville, Fredericksburg, Front Royal, Gainesville, Leesburg, Luray, Sterling, Winchester and Waynesboro. Each sells for \$0.78. A county topographic map, scale 1:50,000 in which one map inch equals about 0.8 mile on the land, is now available for Stafford County. This map, which measures 28 x 37 inches, depicts by color and symbols the natural and cultural features of the county. The Fredericksburg-Spotsylvania National Military Park and the Quantico Marine Corps Schools areas are outlined in color. This is available for \$2.08.

These maps can be purchased over the counter or by mail from the Virginia Division of Mineral Resources, Box 3667, Charlottesville, VA 22903. VIRGINIA WILDLIFE

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DUCKS ABOUT THE SAME. The 1975 fall flight forecasts published by the U.S. Fish and Wildlife Service indicate that duck flights in this area will be similar to those found during the last hunting season. A slight increase is predicted for goose populations due to favorable habitat conditions on the breeding grounds.

COAST GUARD WARNING. The Coast Guard reports that defective personal flotation devices are being offered for sale as reconditioned Coast Guard approved devices or "factory seconds." As part of its quality control measures, a large PFD manufacturer would slash any devices found to be defective with a knife, and discard them. This action was intended to prevent anyone from assuming that a defective device was in good and serviceable condition. The Coast Guard requires that any item sold as "Coast Guard approved" must be made of new materials and meet all applicable requirements. "Factory seconds" or unserviceable devices do not fall into this category. The Coast Guard advises that you not purchase any device which is being advertised as a reconditioned Coast Guard approved device or which appears to be damaged in any way. These devices are defective and may not aid in saving your life!

CONTRARY CREEK CONTROL. A three year project to control a severe pollution problem in Louisa County's Contrary Creek was started July 21 by the State Water Control Board. Under a quarter million dollar grant from the Environmental Protection Agency, the project aims to eliminate acid runoffs from long-abandoned mines north of Mineral. The "demonstration" project will be a practical test of methods to control pollution from the piles of wastes left by mines that have been inactive for about 54 years. During the past half-century the high concentrations of dissolved metals have washed into Contrary Creek (making it sterile and unable to support life) which flows into Lake Anna. Acids from the pyrite wastes, in addition to other metals associated with the pyrite mining operations - such as copper, zinc, iron, manganese and sulfur - are poisonous to fish and other aquatic life. Most of the pollution is caused by sulfuric acid, formed by the oxidation of the pyrite. If successful, the project should significantly improve stream quality in Contrary Creek.

DATES FOR BIG GAME CONTEST. This year's Big Game Trophy Contest will be held October 10, 11 (Western Regional) and October 18 (Eastern Regional). The State Contest will also be held October 18. The Western Contest will be held in Harrisonburg at the Harrisonburg Auto Auction, off Exit 62 - I-81 on Pleasant Valley Road. For entry details, contact Robert A. Wolfe, Court House, Harrisonburg (703)433-2404 (business) or (703)828-3925 (residence). The Eastern Contest and the State Contest will be at Deer Park Elementary School intersection of routes 143 and 17 in Newport News. For entry details, contact Robert L. McDaniel, 39 Glendale Rd., Newport News, 23606 (804) 878-3692 (business) or (804) 596-6785 (residence).

ENDANGERED PLANTS REVIEWED. More than 10 percent of all plant varieties in the United States are being reviewed for possible classification as endangered or threatened species. The areas where the plants exist are also being studied to determine if they qualify as "critical habitats." The review was undertaken in response to a report prepared by the Smithsonian Institution (as directed by the Endangered Species Act of 1973). The report found that of the more than 22,000 kinds of seed plants and ferns native to this country, about 2,800 are likely candidates for either the threatened or endangered lists. The report also found that 355 kinds of native plants are thought to be extinct. One major concentration of the plants is found in the Southern Appalachian region. At least one plant on the list is found in each state.

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Morning Sounds At Jamestown

By DORIS S. PEET Williamsburg

S I settle myself on the back porch beside a tub of cucumbers whose destiny this morning is to be pared and sliced and pickled, the plaintive voice of the mourning dove fills the soft, still-wet air. The sun sparkles, the sky is a gay blue, but the song is a sad song that falls like a note of warning.

My father always told me, "When you hear the doves, loud and constant like that, it means we will have a hot day." I don't know whether it is true or not, but whenever I have noticed the continual early morning complaint of the doves, we do seem to have a hot day, so I sigh and my mountain of cucumbers looms larger.

But then the mood of the morning changes. From the thicket close by, a quail calls cheerfully, a tentative note in his voice. I rejoice that we kept the windbreaks and sheltered nesting places for quickly, from the low-branching dogwoods, he receives an answer. Or perhaps it is just another call, a clear whistle and a scene to lift the heart as a family, marching one behind the other, steps out across the corner of our yard. The cucumber pile diminishes, and the day seems large and splendid.

A light mist still hangs above the river, and another whistle breaks through the trees, a man-made whistle, the blowing of the Jamestown Ferry nosing into the dock. I listen to the laboring engine and the churning water, and then all is quiet again until a blue jay discovers some apple parings and bits of fruit I had put out earlier. The first one to come by perches in the pine tree near the porch, and after a minute or so, apparently satisfied about me, pipes his beautiful little trill. Three or four times he runs through this most melodious tune before he begins the almost raucous call for which he is best known. He has spied the apples and is making a to-do about it to summons the rest of his clan, and it does, in short order.

His cries also bring several cardinals and a thrush who move in from time to time. Many people dislike blue jays. They are known to be noisy and are considered fighters, but they have their good points too. They always call each other to share any largesse they come upon. No find is kept a secret to be individually enjoyed. Also, they have strong beaks that break fruit and suet and other hard foods open, so that less well equipped birds, some of them our most delightful songsters, can eat too.

Two years ago, a windstorm claimed one of our mighty pines. It broke about a third of the way up, and

we let the trunk stand, even though it was desolate looking, after the rest was cut for firewood. We left it for the woodpeckers, because their homes grow ever more scarce as large wooded areas become home sites and property owners tidy up their acreage.

While I watch the blue jays, I hear the noisy shout of the pileated woodpecker somewhere in the ravine, and then a lesser imitation, not quite so earth shaking. A few minutes later, the pileated's huge wings flap out of the woods and across the lawn to the broken pine, where he begins to drum with all his might at a new door he is fashioning. Seconds later a smaller replica flies the same route to a nearby stand of locust. I conclude we have a family situation, and I am glad for the lonely, broken pine that might provide them the shelter they need next winter.

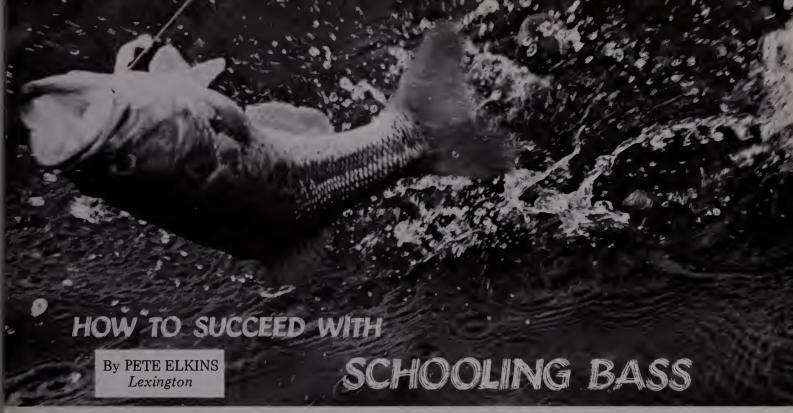
From the tiny pond beside the porch, a young bull-frog tries out his vocal chords, newly discovered. His production reminds me of our sons when their voices were changing. He starts out with a heavy, good-sized croak, only to fade into a mild honk before he is rightfully finished. Undeterred, he continues about every quarter hour or so, to try out his voice.

Unknowingly, he alerts the cats who live in the wild, having been dumped off as kittens each summer by heartless owners and left to fend for themselves. Several circle the little pond from time to time, but the small frog is sunning himself on a pile of rocks one of our children placed there in the very center for the protection of other frogs in other, long-ago summers.

I take a break from the cucumbers and place some peanuts along the outer ledge of the porch to entice the squirrels. Before I finish my cup of coffee, one little fellow swings out of the bayberry and grabs a nut. Running to the adjacent pine tree, he scales it to eye level with me. With many tail twitchings, he devours the peanut, then eying me for a minute, begins to chatter. I have always wondered what the chattering means. Though we have many squirrels about, we seldom hear them talk, so I listen enthralled. I can tell nothing from his demeanor, but I suspect he might want me to go away so that he can gather the rest of the nuts without so much stress in obtaining them.

It is no longer early morning. The woods "are alive with music." All around me there are bird calls. Many I still do not recognize. There are other sounds, too, that my untuned ear misses, but out on the river there is the fun sound of a motorboat, and I know the world is beginning to rouse itself to a lovely summer day. In the distance I hear the boom of the cannon as the flags go up at Jamestown, and finally, warm and touchingly beautiful, the strains of "Carry Me Back to Old Virginny," drift down upon me and my dwindling cucumbers

"No place on earth do I love more sincerely..." The song ends, the man-made drumbeats fade. The giant woodpecker takes up again where he left off.



"SCHOOLING" describes the behavior of largemouth bass and other species, notably freshwater stripers, when they are attacking shad, or other forage species on the surface. A "schooling bass" is often called a "schoolie," and the style of fishing is frequently termed "jumpfishing." However you describe it, this is the most exciting form of Virginia freshwater angling.

The phenomenon is most likely to occur early and late during the day. If the day is darkly overcast with minimal wind, opportunities are even greater. Late summer and fall are the peak periods. These periods reflect the most active stage of adult gizzard and threadfin shad.

Since this is at least entitled a "how to" article, how does one catch schooling bass? The answer is treacherously simple: just be within casting range when bass suddenly burst to the surface in pursuit of shad. Obviously, this raises a few problems. Since schooling bass rarely blanket more than a fifty foot wide surface area, the act of being on the exact spot in a ten or fifteen thousand acre reservoir requires a copious measure of blind luck.

The capricious luck factor can be reduced through experience and deduction. For example, Chuck Pearson of Lexington and I were exploring Lake Anna on an overcast, cool September morning. We had tried several usually reliable deepwater spots with only a few bass for our efforts. We knew that the continued overcast might induce the bass to stay near the surface throughout the morning. On several past occasions, I had encountered "schooling" activity over a wide "flat" where the water averaged eight to ten feet deep. After a short, bracing trip uplake, we eased

toward the anticipated schooling area.

I cut the Evinrude well away from the flat, and continued silently with the electric motor. The surface was unruffled, except for scattered masses of shad rippling along in an apparently patternless movement. But the shad were an encouraging sign. If concentrations of shad are in the area, particularly in a blossoming lake like Anna, bass are probably nearby.

They were! Forty yards away from the boat, panicked shad squirted skyward, away from the foaming swirls of pursuing bass. The electric motor moved us within range. Chuck's first cast with a chrome Big-O resulted in a thudding strike. His light spinning rod assumed a respectful halfcircle to complement the reel's stuttering drag.

Not one to argue with success, I instantly removed the spinnerbait which had survived one cast unscathed, and replaced it with a shad patterned Big-O. Chuck was extracting the hooks from his bass when I made my second cast. Nothing happened until I started reeling much faster with the highspeed reel. The sprinting lure suddenly jarred to a stop halfway to the boat. The reason for the sudden halt surfaced in an angry boil of flared gills and rattling lure. After sprawling back into the water, the muscular two pounder played bulldog for a few minutes before yielding to my spinning rod.

The surface antics of our two bass apparently spooked other bass in the same school. However, only a bit farther away, another frenzied shad convention skittered across the surface with bass in hot pursuit. Again, long casts on our part produced two scrappy largemouth in the two pound class.

For the next thirty minutes, we connected with

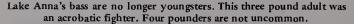
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largemouth by cruising silently back and forth through the areas of shad concentrations. Occasionally, we hooked a bass when no surface flurries were visible. However, most of our strikes came after casting toward wildly feeding bass. Our morning's catch was typical of schooling bass: all in the one to 2-1/2pound bracket, with shad gorged gullets. We caught a few larger bass, but, although in the same area, they were taken on the bottom with plastic worms and Fliptail lizards. Bass over the four-pound mark rarely join actively feeding surface schools of their smaller relatives. Yet, these heavier bass can often be taken below the surface action. These older, heavier bass, so the theory goes, prefer to wait on the bottom for crippled shad to flutter down within range. No grubbing in the community larder for these lunkers!

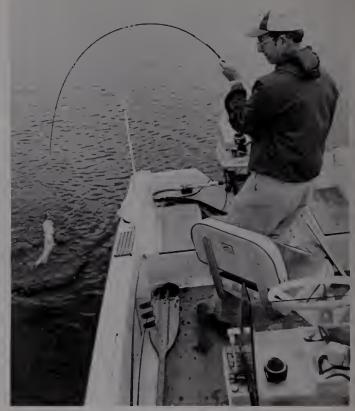
As a general rule, schooling bass are not usually finicky about lures. If the lure is active, vaguely shadlike and within range, the requisites are met. Yet, sometimes school bass will be fickle about the size of the lure. Shad size dictates lure size. For example, during the schooling action at Lake Anna, I used a smaller Big-O, while Chuck opted for a bigger version. The shad were fairly small. Unfortunately, or fortunately at the time, the bass failed to note the distinction. If anything, they crashed Chuck's big chrome lure much more readily than my "properly sized" lure. But as a general rule, matching the forage size with lure size produces more strikes.

The common denominator of our success appeared to be a super fast retrieve. Other good lures for this fast paced angling technique include tailspinners such as the "Little George," vibrating lures like the "Hot Spot," "Bayou Boogie," etc., and on occasion, topwater plugs equipped with propellers.

Even though this surface turmoil has ceased by the time you arrive within casting range, it's advisable to







Chuck Pearson of Lexington lands an exhausted largemouth taken on a shad-imitating plug.

cover the area with exploratory casts. Smith Mountain's freshwater stripers are often taken on casts made after the surface frenzy has subsided.

Both spinning and casting gear is well suited for schooling action. Unfortunately, flyrods are a bit slow under circumstances where every second counts. Schooling bass create one of those rare instances where the ability to cast for distance is more important than casting accuracy.

The schooling phenomenon is nothing new in saltwater circles, but many sweetwater anglers have never encountered it. Once they do, fishing is never quite the same again. It's an exultant, unrestrained angling genre, where the strikes come fast or not at all.

Since schooling action may develop on virtually any large body of water in Virginia, it's difficult to pinpoint specific areas. However, Lake Anna probably offers the best of this high speed style for largemouth bass fanciers. The bucketmouth brigade can also encounter schooling bass on Kerr and Smith Mountain Lakes, but the striped bass dominates the surface action in these two impoundments.

In addition to largemouth and stripers, white bass are also prone to chase shad on the surface. Claytor Lake is the center of the white bass scene, although Smith Mountain may, within the next few years, become an important white bass fishery. Crappies even school on the surface, but they don't go for the high speed bit, preferring a steady, sedate retrieve.

Whatever the species, schooling action creates the wildest, most unforgettable moments in freshwater angling.



Commission photo by Kesteloo

FOREST CLEARINGS

How Size Affects Wildlife Use

By L. A. RUEGER and R. H. GILES, JR. Department of Fisheries and Wildlife Sciences Virginia Polytechnic Institute and State University

MALL wildlife clearings have been made for years to improve conditions for wildlife. These provide edge which has a very salutory effect and provides a new variety of foods not found in the forest.

Recently larger clearings have been made for forestry benefits. While these also have beneficial effects for some wildlife, such as providing food for deer and nesting sites for turkeys and grouse, they are harmful to other species. What is the right size is a complex problem. We investigated, using the Virginia Tech computer, a small part of that decision.

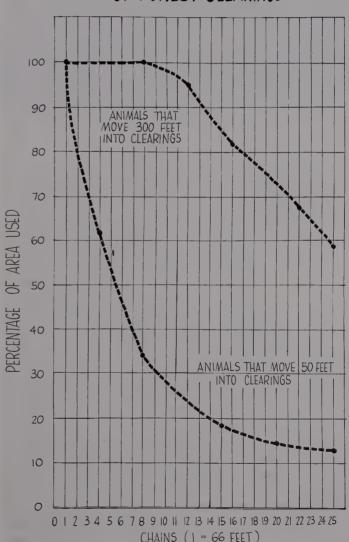
The graph shows how much of a square clearing is useful to or utilized by wildlife. We know clearings are often not square, but with a simple assumption we can get a picture of the general trend. The graph shows what happens to two types of animals: one, such as the woodland cottontail rabbit, that may not venture far into a clearing (say a maximum of 50 feet); or a deer (say 300 feet). There are many reasons for an animal moving into a clearing. One, of course, is to feed on the grass and succulent foods growing there in the area now bathed in sunlight.

From the plot of our computer results we learn that the larger the clearing the less of it is likely to be used by wildlife. We knew this before, but we now see clearly that the rate decreases rapidly but then levels off. The more wide ranging the animal, the more slowly this point is reached. This means that there's a breaking point, a place on the curve where we can decide what is an optimum size for clearing-using wildlife. What this means is that the larger a clearing, past a point, the more of it is wasted for wildlife use.

That point is critical and it has to be determined on the basis of which species are present, which are to be managed intensively, and what importance society attaches to each. Another major ingredient of this complex solution is the behavior of the animal itself. How far it ventures into a clearing, how much it will use, is critical. This can be determined from trapping, attaching small radio transmitters to wildlife and from track counts in the snow. For a particular animal species, say wild turkey, that may venture on the average about 300 feet into a clearing, the clearing should be no greater than twice that wide.

Theoretical and field wildlife research can lead to improved land-use decisions that affect wildlife.

WILDLIFE UTILIZATION OF FOREST CLEARINGS



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POSTED NO HUNTING OR TRESPASSING

Is This The Last Season?

By BILL TREADWELL
Daleville

INDING a place to hunt is not easy, unless you know somebody these days. Getting a landowner's permission to search for game is more difficult each season. A polite "no" is a frequent reply. And rightfully so, from the landowner's point of view, as he has seen his property, fences, livestock and in rare cases he himself abused and/or mistreated. Countless farmers or property owners, who once welcomed hunters, have replaced the welcome mat with an array of POSTED—NO HUNTING, FISHING OR TRESPASSING signs. Many dense hedgerows and rugged mountain hollows where I once sought game now are tinted with red or blaze orange posted signs.

The farmer has problems enough without having to take the time to police his property for freeloaders who wander upon the premise without permission or to clean up after hunting parties. Recently, the owner of a nearby farm said he is "considering putting a halt to all hunting rights," since he had just spent a portion of the day picking up beer cans left in a corn row. As we talked, farmhands across the road on adjoining land were tilling a freshly cut corn field to discourage the slew of dove hunters and permission seekers.

Farmers, landowners, game commissions and even elected state officials are not to be blamed. The hunter has himself to blame for being denied permission to hunt. It's a case of public relations: not merely getting along with people, but respecting their personal property and possessions as well. If the hunter would put himself in the landowners' place he would understand why they do not want MORE problems. While the hunter may be escaping some of life's daily tensions to enjoy nature's environment, he too often is adding to the landowner's headaches.

The hunters' woes also are increased by congressional and legislative gun control laws, season date setting and game regulations that become more restrictive each year. Antihunting groups are on the soap box protesting both guns and hunting, few of them seeing the hunter as the principal behind wildlife protection and management. Then there is a shortage of hunting areas.

Some day we will be packing everybody into one mountain hollow or lining up elbow to elbow in the corn field. Because of over-population and expansion, land developers are utilizing hillsides and valleys that once contained a herd of deer or covey of birds.

And there is always that small minority of hunters who disregard the law, take illegal kills, shoot up road signs and farm buildings, hunt from moving vehicles, leave game unclaimed, litter the surroundings and tramp down fences and freshly planted fields. These few renegade "sportsmen" are the ones that give hunters a poor image. These "criminals," who seldom face deserved punishment, threaten to spoil it for everyone.

Each new hunting season brings excitement to a man's spirits. But that haunting question—"Is this the last season?"—lingers. Many groups have found that one way to continue their sport is by forming a private membership hunt club. This usually requires the acquisition of land, but affords each the security of at least one retreat. By knowing a member, you may have connections in getting a visitor's permit, or being lucky enough to be invited to join a shoot.

Through many state and national wildlife organizations, hunters have formed a common bond to protect and preserve their sport. A club has been sponsored for about every type of upland game bird and animal hunted. These groups were originally formed out of concern and respect for the game; but many have changed their objectives to preserving their right to hunt.

The key today is knowing someone—prominent people, landowners, farmers or just having some "ole" hunting buddies as an "in" to a place to hunt. Hunters are talking and bragging less these days about their hunts for fear of tipping off good locations for game. You almost never hear a bird hunter reveal his favorite covers. Hunters are taking precautions and being more secretive than in past years. One telltale way of locating hunting areas is the observance of parked cars along roadsides. It may be impractical to arrive on the scene by taxi or have your wife drop you off, but changing cars or parking locations may extend the life of your secluded haven.

Like many freedoms in our United States, hunting is a PRIVILEGE and not a right! Every hunter faces the challenge of keeping this privilege alive, for himself and others. We enjoy a Constitutional right to keep and bear arms, but what purpose will it serve the hunter if there is no place to hunt? Virginians are just starting to feel the ecological pressures many states have had for years. One day the clay pigeon may be the only target a hunter can take aim on; unfortunately, it is inedible. We could be rapidly approaching the stage when hunting will be by allotment, drawing or NOTHING at all.

Is this the last season? Unless hunters take heed of the privilege they now enjoy, and respect the rights of man and nature, they may soon find hunting a thing of the past and the hunter a victim of his own game.

Rappahannock Rhapsody

By PETE ELKINS
Lexington

Joe Wiseman admires intricate stonework in an old lock.



Tom Brightman readies his gear for a morning on the Rappahannock.

VERY river has its song. Experienced canoeists learn to heed that song. When the rapids sing with a light, dancing tenor, the paddlers enter, intent only on choosing a path through the maze of rocks, eddies and cross-currents. When the rapids sing a barrel-chested bass that vibrates far upriver, the paddlers wisely stop above the rapids to scout their path.

If a river sang a constant song, the challenge of canoeing would be slight. But the song changes, with seasons and weather. And with those changes come challenge and danger.

That summer day on the Rappahannock, the river sang a subdued song of low water and exposed rocks. My wife, Betsy, and I were in canoes for the first time. Since we knew so little about these sleek craft, we chose our companions well: a representative group of the Float Fishermen of Virginia, informally captained by R.E.B. Stewart, III, of Portsmouth, conservationist, canoeist and angler extraordinaire.

We began our float below Ely's Ford Bridge on the Rapidan. We would leisurely fish our way down to the confluence with the Rappahannock, camp there for the night, then continue downriver to Motts Run Landing the following day. We pushed out into the Rapidan, still murky, but clearing from a few days of rain. I used a tiny (1/32 oz.) purple-bodied beetlespin, while Betsy tossed a white one. Both of us had constant action. The strikes produced a mixed bag, typical of clean, free-flowing Virginia rivers: redbreasted sunfish, rock bass or "redeyes," and small-mouth bass.

Redbreasts were the dominant species. These chunky panfish are the mainstay of the river fisherman who likes artificial lures. Seemingly fearful of nothing, the redbreasts attack bass plugs, spinners, poppers, streamer flies, or anything else that moves through or on the water. On ultra-light spinning or fly-tackle, the redbreast fight a spirited fight before being lifted into the canoe.

The "redeyes" of the Rapidan and Rappahannock were typical of their species: bullying and strong at first, then docile after the first strong sprint. But, oh how they smacked a lure! Redeyes hit with the force of a smallmouth. Like the redbreast, the rock bass will strike virtually any lure.

Unlike redbreasts and rock bass, the Rapidan small-

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mouth were playing hard to get. At least the big ones were. Master float guide Pete Rowe's young son was prospecting with a silver Mepps spinner when he struck bronzed gold in the form of a tough two-pound smallmouth. The best that I could manage on the Rapidan was a ten-inch adolescent.

In between casts, I marveled at the canoeing skill of my partner in the stern of the 17 foot Grumman. Mike Carey of Virginia Beach was president of the Coastal Canoeists, a white water-chasing organization, as well as a member of Float Fishermen of Virginia. Mike did things with his paddle that turned the silver canoe into a well-tuned machine sensitive to every subtle command.

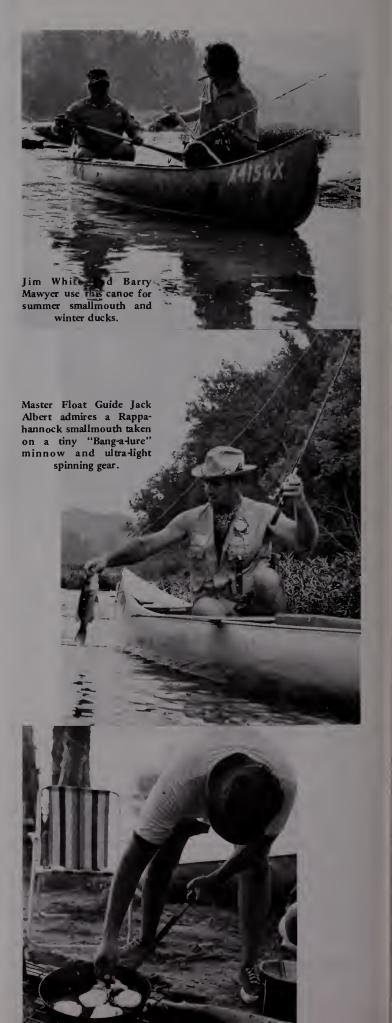
Soon the placid Rapidan became restless, gathering speed and freshness as it neared the Rappahannock. Then we entered the "rock garden," a long series of rapids above and below the confluence. During high water, the "Garden" would have been dangerous, demanding skill and experience. But that day the rocks were only obstacles to be avoided. I laid aside my familiar spinning rod for the unfamiliar paddle and soon was enthralled with the alive response of the canoe. Under Mike's considerate tutelage, I learned the vital "draw" stroke of the bowman, which enables the paddler to abruptly move the canoe a foot or more sideways in the water without turning in the current.

Soon, we reached the campsite. Most of the other canoeists had arrived before us. The site was well chosen by Jack Albert, master float guide from Portsmouth. It was high, dry, wind-cooled and scenic. We would wait for the evening cool and shadows to stir the sleeping smallmouth. In the meantime, Betsy and I joined the others in setting up camp. The Float Fishermen knew their game: canoes were properly secured to the shoreline, tents and versa-tarp shelters efficiently erected, a fire pit dug, driftwood gathered for a cooking fire. An upside-down canoe served as a table.

In the quiet time before the sun disappeared, when the water is silky dark and bass rise on a foaming swirl to take a popper, we waded the "rock garden" in search of *Micropterus* the smallmouth. But the summer heat had done its work too well, and the bass refused to come up. The sunfish again saved the day. When it grew too dark to see the bottom underfoot, we returned to camp, carefully picking our way over the rocks in the growing blackness. In other circumstances the evening darkness would have been gloom, but there it was only tranquility. I paused for a moment atop a rock.

The campfire was a warm glow in the dark line of trees. Voices came softly over the water. The river swirled eastward, a velvet alive creature in search of the sea.

Pancakes on the Rappahannock make an unforgettable morning. Here "Mac" McClellan of Portsmouth mans the spatula.



The initial trout stream classification is expected to require approximately six years or longer to complete. However, stream productivity estimates will probably continue indefinitely as time permits and the need arises, the classification will be continually updated and periodic revision will occur as new information is obtained.

Streams will initially be rated "A" through "D" based on their aesthetic appeal, productivity and ability to support trout. Water quality and the intrusion of man-made features will be the major considerations in the aesthetic rating. Also included will be a size rating as a guide to the stream's potential for providing recreation.

Class I streams may be defined as wild trout streams of outstanding quality which contain excellent populations of wild trout or the potential of supporting a high population of trout.

Class II streams will include wild trout streams of somewhat inferior quality. This category may include streams of low productivity which do not contain a large enough trout population to support more than light fishing pressure. It will also contain streams having reduced summer streamflows. This type stream may be considered for inclusion in the put and take program.

Class III streams will be streams which will not support a wild trout population but can support trout over summer. These streams may be considered marginal trout smallmouth streams. Some of these (not having fishable smallmouth populations) may be considered for the put and take program.

Class IV streams may or may not support trout over summer. They will usually contain fishable populations of cool or warmwater fishes and will be considered unsuitable for trout.

Class V streams or stream sections will be badly polluted, channelized, or will have stream flows occupying less than 10 percent of the channel and not suited to trout.

The Monk Parakeet (Continued from page 21) monk parakeets could accomplish is great. Probably more important than the amount of food consumed, is the amount that could be contaminated or damaged.

The spatial question led us to investigate the possible distribution of the monk parakeet in the Continental United States, basing it on the maximum and minimum average temperature and rainfall that exist in the parakeet's native land of Argentina. The bird has tolerated a high of 112 degrees Fahrenheit and a low of zero degrees Fahrenheit (Table 3). Unfortunately, 90 percent of the predicted optimum areas for the monk parakeet coincide with most of the best lands for crop production in the U.S.

The monk parakeet, in addition to its potential as

an agricultural pest, is also a possible disease reservoir. As with many other birds, the government has recently banned importation of monk parakeets in an effort to eliminate new sources of Newcastle disease. Parrot fever, or more specifically the disease psittacosis, is probably carried by this parakeet. Large parakeet populations, in close proximity to man, might represent a serious reservoir of infection. Because of this bird's preference for human food crops, the possibility for contaminating food with this disease exists.

Many methods to reduce the monk parakeet have been attempted in Argentina. Some of these techniques are so severe that laws in the United States prohibit their use: Strychnine or arsenic poisoned baits and nest spraying with 6% DDT and dieldrin. Other methods attempted are burning nests, shooting adult birds, netting and trapping and offering bounties for pairs of feet. All these methods have been complete failures with the exception of the slight success of one, spraying with 6% DDT and dieldrin. Dieldrin at 6% concentrations not only kills adult parakeets and young in the nests, but is severely toxic to all wildlife and possibly to humans in areas around the nests. The secondary ecological hazards are well known. Spraying DDT and dieldrin in these quantities is environmental suicide. Some farmers in Argentina have not informed authorities about the location of nests, despite harsh fines; they wished to avoid the use of this technique on their lands.

Control is needed, and needed now. The Bureau of Sport Fisheries and Wildlife needs a policy on the problem and needs to make it public. The bird is beautiful and sentiment can easily grow to protect it or even encourage it. The result might be as dangerous as for a society to learn to appreciate a multicolored oil and chemical discharge into a scenic river. The monk parakeet may be an ecological pollutant. Policy alone will not solve the problem but it will prevent the wait-and-see attitude that will carry us over the brink without a feasible way to recover.

Shooting the first invaders, destroying nests, poisoning by trained commercial exterminators and educating the public to the hazards are means to control the bird. Importation bans must be held; pet shops and owners must be taught not to release unwanted birds. Research on the bird is needed. We may be able to avert a crisis - a rare thing to do.

The time to act on the problem was a few years ago. Any further delay in the elimination of the monk parakeet creates an even more impossible problem for the future. Our social system and technology has produced the optimum habitat, many crop monocultures. The monk parakeet is here. Do we change "The Play" into a three act comedy and laugh together at the averted human caused and cured malaise, or do we write the script for a tragedy with an infinite number of expensive acts?



S it possible that after lessons from the starling, rock dove and house sparrow invasions, we can allow another bird to become a pest? Beset with monumental pollution problems, we are unaware that we are being stalked by another round of avian pollution.

If history is to be our teacher, we should learn from the sequence of events that followed the introduction of the starling. Between 1870 and 1900 the starling was introduced to North America in 10 different cities. All but one of the populations died out. The surviving population of starlings was limited to Greater New York City, with estimates of the original numbers released varying between 100 and 160 birds. A critical observation is that over the first 6 to 15 years the starling population did not rapidly expand, but was apparently becoming well adjusted to its new environment. Between 1905 and recent times the starling population exploded and spread north, south and west at an accelerating rate. By 1940 the population was conservatively estimated at one million. It would be difficult to estimate the size of the starling population in North America now, other than to say it is the most numerous avian species. An estimate in excess of a half billion would probably fall far short of the actual figure.

There are now many reports in North America of established populations of the monk parakeet (Myiopsitta monachus). Authors of these reports voice grave concern about the ease with which this bird might become a pest. Their concerns are well founded.

In 1968, 12,000 parakeets were imported into the U.S. in the pet trade, and recently the figure has jumped to near 20,000 annually (except for a temporary ban in a government attempt to eradicate Newcastle disease, which kills poultry). Escapees from pet industry shipments or releases by disillusioned owners

have been reported in 25 states. Wild breeding populations have been reported in New York, Massachusetts, New Jersey and Virginia. Wild flocks have been reported in the Dakotas, Minnesota, New Hampshire and Florida as well as most states in between.

The bird is potentially a multiple threat. Agricultural loss, troublesome nests, disease transmission and competition with native wildlife are possibly all on the horizon.

The story of the monk parakeet as an agricultural pest can be read in the history of crop damage done in Africa and Australia by different members of the parrot family. The best evidence, however, comes from the monk's own record in Argentina where it has caused tremendous crop damage. In Cordoba Province, Argentina, as high as 45% of the crops have been eaten or rendered useless by the parakeet per growing season. Severe agricultural havoc has been reported in 60% of the bird's entire range including parts of Brazil, Paraguay and all of Uruguay.

Monk parakeets eat a diverse variety of foods. Corn and sunflower being preferred, the birds will also eat wheat, rice, millet, oats, most other grain crops, apples, pears, peaches, grapes, most berries, soybeans and most citrus fruits. In areas where the parakeets occur in large numbers, they tend to be nomadic opportunists, feeding on whatever crop monoculture humans provide. Highly prevalent crop monocultures in

TABLE II. NUMBER OF MONK PARAKEETS THAT MUST BE KILLED ANNUALLY, IN ADDITION TO NATURAL MORTALITY, TO HOLD A CONSTANT POPULATION AT 28,000

Start of	Birth Rate Assumptions (See Table I)	
Control Program	I	II
1975	70,000	270,000
1980	1,300,000	18,300,000

the United States tend to give the monk parakeet its greatest source of food during its nesting season. This unfortunate coincidence would tend to insure pairs a very high nest success.

An exotic animal introduced into a favorable new environment is rarely confronted with the adversity necessary to hold its population in check. Most pioneer animal populations follow an expotential or j-shaped growth form which is an expression of this weak resistance from the environment encountered by those populations. We used a computer-based population simulator to project possible future monk parakeet populations over a ten year period. The simulator used sex and age ratios, and measures of nesting success and death rates. Table 1 presents assumed values of mortality, clutch size, starting population size and breeding periods per year. When the simulation was calculated with those assumptions the population responded as shown in Figure 1. It should be kept in mind that our simulated increase in population size would probably be somewhat delayed and follow an adjustment period as was observed in the case of the starling population. Even under the most conservative set of assumptions (curve I, Fig. 1), the parakeets increased from 28,000 to over 60 million in just 10 years. It is probably more realistic to assume that these birds can breed twice per year, especially in warmer climates. Under these assumptions, the total

TABLE III. VALUES USED TO DETERMINE POTENTIAL AREAS FOR THE MONK PARAKEET

HABITABLE	OPTIMUM
Max average temp: 98° F	Max average temp: 85° F
Min average temp: 15° F	Min average temp: 25° F
Max average rainfall: 70 in.	Max average rainfall: 55 in.
Min average rainfall: 8 in.	Min average rainfall: 20 in.

Figure 1. 1,000,000 II

(00 100,000 II

1,000

1,000

I: 1 clutch per year
II: 2 clutches per year
VEARS FROM JANUARY 1975

population of parakeets might exceed 1 billion in nine years. Fig. 1 shows clearly that the parakeet has the potential to achieve high populations very rapidly. Table 2 presents estimates of the number of parakeets that would have to be killed by control methods, over and above the number lost through "natural" mortality, to hold a constant population at the assumed present level (28,000). It emphasizes that if the decision is made to eradicate or control monk parakeet populations, much less time, energy and money would be required now than a few years from now.

Table 2 and Figure 1 represent predictions of future events in the sense that they indicate what will very likely occur with some fairly realistic assumptions and educated guesses. The number of birds is very impressive. The disagreeable voice, the large stick-nests they build on houses and utility poles might be both parts of the problem of excess. The potential amount of agricultural havoc large hordes of (Please turn back to page 19)

TABLE I. ASSUMPTIONS USED IN COMPUTER SIMULATION PROJECTIONS OF MONK PARAKEET POPULATIONS.

PARAMETER	DATA	ASSUMPTIONS
Starting population	2500 estimated residents of New York City alone, sighted in 25 states, known breeding in Virginia, New York, New Jersey, Florida and Massachusetts	14,000 breeding pairs
Clutch size	4 - 6 eggs per clutch	(We assumed 5 eggs per clutch)
Breeding periods per year	One pair in Saxony, England known to have produced 40 offspring. 31 day incubation	I - one per year II - two per year
Mortality		Assumed mortality by first age class included that from egg to end of first year. All mortality was density proportional.
		Age class 0: annual mortality = 40% Age classes 1 and 18-20: annual mortality = 35% Age class 2-17: annual mortality = 30%
		Assumed that maximum longevity was 20 years, which seems reasonable for this intelligent member of a long-lived family.

Recycle Your Ammunition

By BILL ANDERSON Haysi

RELOADING ammunition, or handloading, is nothing new. Shooters have been happily putting together their own cartridges since the advent of fixed ammunition. But if the average hunter looks about him, he will find he probably can count on the fingers of one hand the number of hunters he knows who reload. Most sportsmen buy new factory fodder from the shelf of their local hardware or sporting goods store. Not only that, but many hunters I talked with are so skeptical of reloads they wouldn't hunt with them if someone gave them a free season's supply. I will stress at this point that properly reloaded ammunition is every bit as dependable and as accurate, sometimes more so, as factory ammunition.

What a waste! What a lot of litter! When I go camping and hunting, not only do I often see many fired shell casings, but also discarded empty ammo boxes. These items are discarded wherever the shooter happens to empty them. A few days back, while afield, I picked up a couple empty shotshell boxes and nearly enough hulls to fill them. Just before our deer season began I gathered a handful of .30-06 brass and two empty boxes from the shoulder of a country road. All of the brass look just-fired and was clean and like new. Most of my empty shells come from friends and relatives, who are more than glad to save empties for me when I ask them to. My main reason for picking up empty shells afield is to keep out of the forest and fields some of the litter that gives sportsmen a tarnished reputation.

In this day of high prices and shortages of almost everything, why not save yourself some cash and at the same time help conserve our rapidly dwindling metal supply? Only a few days ago I read a news item that claimed that with our present consumption, our lead supply will not last fifty years. Both bullets and empty shells are expensive components when purchased new. With free brass and home-cast bullets, the shooter can shoot for much less than half of retail price.

I cast my own bullets for my percussion guns and my calibers .38 and .357 revolvers. The fact that bullets shot afield cannot be recovered is of little consequence, since most of my pistol and rifle bullets are fired at tin cans and paper targets. These bullets are recoverable. This lead is properly mixed, melted down and used again and again. Caliber .22 bullets are also saved for casting revolver bullets.

My bullet trap consists of a durable cardboard box packed tightly with old newspapers, magazines or catalogs and snugly bound with tape or cord. Targets are thumb-tacked or taped on the box, which by the way makes an excellent safe backstop (although the box shouldn't be depended on as the only backstop). To make my box last longer, targets are shifted a few inches from time to time. When I figure bullets are about ready to start completely penetrating the old box, a new one is placed behind it; consequently, the only time bullets are lost is when my marksmanship isn't up to par.

Loading does require some initial investment, but the careful shopper can equip himself for a minimal cost. I began with one of the tabletop kit loaders, but found it to be painfully slow and inconvenient even for my modest ammunition requirement. So I soon graduated to a simple one-station bench press, which I am still using. Besides a press and dies, a beginner needs a good reloading manual, such as that published and sold by the NRA, and if he casts his own bullets he will need casting equipment. Some loaders use a case length gauge, but with moderate loads I have never found this item to be necessary except for bottleneck cases. A scale and some type powder measurer are necessary items. I find a scoop type measurer accurate, but I like to weigh a powder charge fairly often to be sure there is no error.

Is reloading for the shooter who burns only four or five boxes of ammunition each year? Often he can split expenses with a friend or two who likewise doesn't shoot a great deal. Dies for all calibers can be used in the same press; therefore, your friend having a caliber different from yours is no obstacle. Or you might club up with several friends or join an established shooting club that already has reloading equipment.

Often, once a shooter gets into the reloading game he finds loading in itself a fascinating hobby. He will find himself trying to put together tailored cartridges that shoot better in his gun than do factory ammo. He will find himself shooting fifteen boxes of ammunition for the price of the five he was previously shooting, and enjoying the whole thing more.

You might want to start off with one of the small loading kits like that made by Lee, especially if you are pressed for space. Besides being slow, the only problem I had with this type loader was in resizing some brands of shells. If you have the space, a press, less dies, can be had for little more than twenty dollars.

There are many other items and gadgets available for the serious loader, and the loader of shotshells may need equipment other than that I have mentioned. Standard safety rules for loading should apply at all times for either the pro or tyro. Giving full attention to the business at hand is probably the most important rule of safety. And the beginner might do well to begin loading under the watchful eye, and advice, of an experienced loader.

If you are a NRA member, their several experts stand ready to answer any question you may have.



Edited by MEL WHITE

Attorney General Levi Speaks Out Against Handgun Abuse

Attorney General Edward H. Levi, testifying recently before the Subcommittee to Investigate Juvenile Delinquency, Senate Committee on the Judiciary, offered proposals to help alleviate handgun abuse. In effect, he unveiled details of President Ford's proposed crime bill.

"Handguns are a part of the heritage of our nation, a heritage that has been noble, idealistic - and sometimes violent," he explained, in opening his statement. "Statistics show the role handguns play in contemporary urban violence. The statistics about urban violence provide the reason why many Americans have purchased handguns. To millions of people in this nation guns provide a measure of security, whether sometimes illusory or not, and have a psychological importance however unsuited handguns may be to our crowded urban environment.

"It is sometimes argued that the only effective means of curbing handgun vioapproach has its practical problems; there is good reason to doubt that such a prohibition would gain widespread compliance. Moreover, to speak of eliminating handguns is to speak of depriving many Americans of what they believe is a basic right. This belief is widely and strongly held. In order properly to disregard to any extent these substantial feelings, we should have a more compelling interest in mind. The compelling interest is that thousands of persons die or are permanently disabled each year by shots fired from handguns."

strengths and weaknesses in the current Committee on Interior and Insular Affairs.

Gun Control Act of 1968. He said it requires that gun dealers be federally licensed, that they keep records of sales and that the importation of "Saturday Night Specials" is prohibited. Further, the Act generally prohibits dealers from knowingly selling guns interstate and/or to convicted felons. The Attorney General said the 1968 Act has flaws, some of which can be corrected in the Administration's proposals. He explained that they do not provide for national gun registration and licensing but said "our proposals are directed at solving the same problems registration and licensing are put forward to solve."

Congressional Proposals Would Ease Wild Horse Problem

Proposals currently before the Congress would ease what is becoming a mounting national problem over the management of wild horses and burros on federal lands in parts of the West. Under strict protection as provided in 1971 legislation, the numbers of wild horses and burros are mushlence is the total elimination of the hand-rooming to the point where they are gun," he went on. "Yet even that sweeping crowding out indigenous wildlife and creating major land management prob-

Rep. G. William Whitehurst (Va.) has introduced H.R. 2935 "To amend the Federal law relating to the protection, management and control of wild free-roaming horses and burros on public lands in order to provide the authority needed to properly manage wild horses and burros in harmony with wildlife and other uses of the national resource land." Specifically, the Act of Dec. 15, 1971, would be amended to provide that "The Secretary is authorized to Mr. Levi then explained how the Depart- use aircraft and motorized vehicles to proment of Justice had begun an inquiry into vide for the protection, management and finding a solution to handgun abuse. He control of wild free-roaming horses and said there was a common concern about burros, such use to be in accordance with the problem but general disagreement on humane procedures prescribed by the Sechow to solve it. He then pointed out retary." The bill was referred to the House

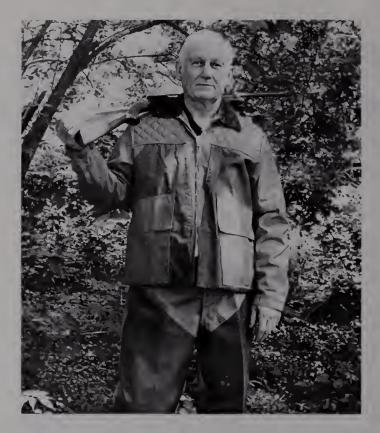


Catherine Gibbs of Charlottesville pulled this 7 lb. 14 oz. largemouth bass from Lake Gaston in April.

The same Committee, interestingly enough, has prepared a draft of an organic Act for the Bureau of Land Management and it contains similar language authorizing the use of aircraft and motorized vehicles in the management of wild horses and burros. It goes one additional step, however, to authorize the Secretary "to sell or donate, without restriction, excess horses or burros to individuals or organizations."

The Wild Horses and Burros Protection Act itself is under attack. In late February, in the U.S. District Court for the District of New Mexico, at Albuquerque, the Act was declared unconstitutional. While the decision well may be appealed to the U.S. Supreme Court, the proposed new legislation may offer means for governmental agencies to better handle a situation which vexes land managers who have virtually no controls over increasing numbers of wild horses and burros.

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Down around Okolona, Arkansas, Dolph Hay's daddy was a farmer, general storekeeper, avid fisherman and hunter and, as far as Dolph was concerned, the best wing shot that he has ever seen. He began taking Dolph hunting and fishing about as soon as he could walk. So early on, Dolph learned the ways of the woods and streams and wildlife and it became a love affair with nature by which he is still smitten.

After he graduated from Little Rock, Arkansas' Central High School Dolph attended college in that state for one year, then went to Washington, D.C. in search of work which would finance the remainder of his college. For the next eight years he worked in the daytime and attended George Washington University and National University in the District of Columbia at night.

However, it was during this period that he met, and in 1941 married, the former Alice Ahalt of Arlington, Va. The following year the eight-year-long marathon of hard work both in and out of the classroom paid off and he received an LLB Degree from National University which subsequently merged with George Washington University. Graduation was followed by enlistment in the U.S. Army and service with the Adjutant General's office until June of 1946 when he was discharged as a Major.

Returning to Arlington, Dolph passed the bar and became a member of the law firm of Ahalt and Hays. Currently he specializes in Real Property Law and Estate work. He is a member of the Arlington Bar Association and the Virginia State Bar and was and is extremely active in all phases of civic projects. He is on the

Know Your Commissioners

DOLPH HAYS

CHAIRMAN, VIRGINIA GAME COMMISSION

Text & Photos by F. N. SATTERLEE Information Officer

Administrative Board of Calvary Methodist Church in Arlington and he is on the Board of Directors and General Council for the Metropolitan Savings and Loan Association of Leesburg and Arlington, Va. Some of his past activities include a stint on the Northern Virginia Regional Park Authority, two years as a Little League Baseball Coach and a seat on the Board of Governors for the Arlington YMCA.

Mr. Hays was appointed to the Commission of Game and Inland Fisheries as Tenth Congressional District Representative by the then Governor Holton in July of 1971. Governor Mills E. Godwin, Jr., reappointed Mr. Hays for a six-year term beginning July 1, 1975, and ending June 30, 1981. On July 25, 1975, during a regular meeting of the ten member body, Dolph was elected Chairman.

The most significant aspect of his work on the Commission, thus far, was the period that he chaired a committee which was instrumental in obtaining a major revision in the pay scale for Commission employees and his involvement in the Commission's purchase of nearly 7,000 acres of land in the Northern Virginia area for use by sportsmen and women. This is in keeping with Dolph's belief that the sportsmen of Northern Virginia, who purchase approximately 25% of all the hunting and fishing licenses sold, are entitled to holdings of this nature located near heavily populated Northern Virginia areas.

Mrs. Hays passed away suddenly in 1965. His daughter, Mrs. Margaret Ann North, and her husband make their home in Boulder, Colorado. Dolph resides in Arlington but he "lives" for the outdoors and wildlife in that continuing love affair begun by his father years ago in Arkansas.





Edited by ANN PILCHER

Firearms Safety Students Score High



J. W. Courtney, Jr., photo

These 14 physical education pupils at King William High School scored 98 on the examination following completion of a NRA Home Firearm Safety Course conducted by NRA instructor John W. Courtney, Jr., of West Point. Some 350 teenagers completed the course in which State Trooper William F. Littreal, Jr., Game Warden George Meredith, Master Rifleperson Janet Silee and Physical Education Teachers Bobby Murray, Fred Valentine and Arllyn Neale assisted. Above, front, left to right: Carolyn Adams, Victor Barnett, George Braxton, Ervin S. Campbell, Michael Fowler, Raymond Henderson and Darnell Jones. Second row, from left: Kim D. Longest, Paul Martin, Barbara A. Miller, Phillip Roene, Jr., Michael C. Robinson, Antoinette Rodgers and Linwood G. Smith, Jr.



Eastern Virginia Junior Rifle League Champs

Members of the West Point Gun Club (Junior Division) became new champions of the Eastern Virginia Junior Rifle League this spring. Registered with the National Rifle Association, six teams fired four monthly 40 shot, 4 position tournaments at the Fort Lee 20 point indoor range. Total scores: 6747 West Point, 6734 Benedictine High School, 5474 John Marshall High School, 4209 John F. Kennedy High School, 2382 Armstrong High School and 1575 George Wythe High School.

West Point Gun Club Junior Division members include, front from left, Bruce L. Moody, Robert L. Verlander, Jr., and Leila Marie Bristow; back, William E. Carter, Charles D. Duvall and Mark L. Carter.

Photo by J. W. Courtney, Jr.

Students Survey Stream

Brentsville District High School students worked last summer and fall under the direction of Mr. Perry, biology teacher, in conducting a stream pollution survey of Slate Run, part of Cedar Run watershed. At the Prince William IWL Chapter's February meeting, Mr. Perry and students gave an excellent verbal and slide presentation of the survey. Results indicated that besides a raw sewage overflow problem, the collecting pond next to the sewage treatment plant leaks and processed water fails to get chlorine treatment prior to being fed back into Slate Run. The study further showed that human waste matter was found as far as 5 miles away where Slate Run fed into Cedar Run. Coliform was found in Slate Run below the plant and the PH of the stream registered high near the plant.

All this was put together in a written report sent to the Prince William Chapter IWL (involved in "Save Our Streams-Adopt One" program) for forwarding to appropriate Health and Water quality agencies and County Supervisors in addition to the national IWLA headquarters.

Pugnacious Pike

Kathy Lynn Kirk of Richmond pulled this 4 lb. 5 oz., 26" chain pickerel from the lake at Woodhaven Shores on March 31. The 9 year old used cane pole fishing equipment.



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Edited by JIM KERRICK

Anchors-the Boatman's Best Friend

A boatman who has only tied up to docks all of his boating life may question the need for anchors; yet, like parachutes, if you need one you really need one. Experienced boatmen, even on small boats, carry two anchors: one of medium weight for temporary anchorages and a heavy one for riding out big blows or for an extended stay. The second anchor is also good in case the first is fouled beyond recovery, or for extra help in hand hauling a boat when aground.

While there are complicated formulas on determining the exact length of line (or cable) to use in anchoring, a reasonable rule of thumb is seven times the length from the deck to the bottom of the body of water. If depth of water (plus height of boat from water line up) is 10 feet, the anchor line should be 70 feet.

When anchoring, be sure to check 360 degree "swing" so the boat won't come too close to other anchored boats, regardless of wind direction. Also, there is a certain amount of drag to expect, even if "fore and aft" anchors are used.

When ready to put the anchor in the water, ease it in carefully; don't give it a toss. If a turn of the line happens to catch around your legs, you could be in for a nasty fall. Also, although it sounds ridiculous, be sure the other end of the line is fastened to the boat. Many an otherwise sharp boatman has carefully lowered his anchor into the water and then watched, horrified, as the unfastened end of the line slides into the water.

Kind of anchor depends on kind of boat you have and type of water you will be cruising in. A competent marine store can advise you.

Of course, the favorite "chore" of all children is driving the boat. It is most

thorough instruction in performing their duties. Many older children attend classes in boat handling offered by Coast Guard Auxiliaries, YMCA's, the Virginia Game Commission, and other groups with their parents. "We had our marine dealer explain the proper boating procedures, including operation of the boat and basic mechanics, to our 10 and 12 year old boys when we bought our first boat," said one family skipper. "Coming from an authority, the tips stuck with the children and they really enjoy keeping our boat shipshape and operating it 'by the book.' They've found that learning and practicing good, safe boating is part of the fun of boating."

Before Shoving Off

Like a child opening birthday presents, taking delivery of a new boat, motor and all fascinating accessories can be a pretty exciting experience. But a person in this admittedly delightful state of mind is apt to overlook a few prosaic but important things in his hurry to get the new boat commissioned and in the water. Here are a few things to check before shoving off:

Is your marine insurance properly taken care of? Make sure of the dates it becomes valid and expires.

The same goes for registration. Are you sure the registration certificate is properly made out and signed so that it is valid? Is it aboard the boat or handy in your key case? Do numbers on the paper check out with the ones you have applied to the boat's bow? After all, it's easy to attach a number "6" upside down. Are the numbers applied to the boat in conformity with regulations as to location and spacing?

If you installed a large-capacity fuel tank in the boat, did you ground it and the filler neck as outlined in installation instructions? This small detail is a very important that children be given important safeguard against static areas the family is planning to visit.

electricity sparks taking place during refueling operations.

Is the fire extinguisher fully charged and aboard? Is the anchor line in good condition and long enough for your waters? Are sufficient life preservers aboard in good condition? Do all hands know where they are kept and how to use them?

Is the pressure in the trailer tires what it should be? How about wheel bearings? Do all trailer-lights work?

After checking the above, you're all set, skipper; shove off!

Give Children Responsibilities In the Boat

Dads and moms who are veteran boatmen speak with authority when they advise parents just getting started in boating to give their children responsibilities in the boat. An informal survey of boating families shows that there's a striking correlation between children's participation as crew members and their sustained interest in the recreation.

From coiling line and handling the anchor to serving as navigator or manning the helm as assistant skipper, there are plenty of duties for youthful seamen. Even a five-year-old will take pride in being the one who sees to it that the boat fenders are tossed over the gunwales before docking and back in the boat after departing.

Some boating families even make up work sheets listing all duties for each outing, and assign different responsibilities to crew members each time. Most children enjoy this business-like approach and pursue new assignments with vigor.

Children, particularly teenagers, appreciate helping to plan boating trips. One family gives its 13-year old daughter the job of writing to marinas, Chambers of Commerce, etc., in boating



N parts of its globe-encircling range, the majestic golden eagle still thrives. It remains fairly common in parts of the American Northwest, in the more remote Alpine ranges and in the mountainous parts of Scandinavia. The wild reaches of the Himalayas still harbor them, as do sections of the Soviet Union. Even in long civilized Scotland the eagle persists in its ancestral haunts.

But no longer do they breed in the hills of Virginia, nor anywhere in the southern Appalachians. The last reported nesting within the State was near Stony Creek, in Giles County, in the 1950's. Dr. J. J. Murray believed they nested along the Devil's Backbone in Highland County during the 1930's. Another pair was known to have nested on the western slopes of Massanutten Mountain in Shenandoah County in the early 1940's. Earlier, ornithologists knew of a few pairs resident in the extreme southwestern counties, and nests in nearby Tennessee and North Carolina are also on record.

Their demise was not brought about, as has been the ease with so much of our disappearing wildlife, by habitat destruction; there is still suitable territory amid the wilder crags of both the Blue Ridge and the Alleghenies. Rather, the golden eagle in Virginia has been the victim of deliberate and relentless persecution at the hand of man. Of the 55 state records tabulated by Dr. Murray, 38 were of birds shot. Such imposing and conspicuous creatures were targets irresistible, trophies highly prized.

Occasional strays still wander, usually in the fall migration, down the slopes of the Appalachians. Hawkwatchers at Reddish Knob and at other observation points spot a golden eagle or two, sometimes more, every autumn. A few birds winter over in little disturbed mountain country and there have been recent sightings of wintering individuals on the Delmarva peninsula. Some even turn up near metropolitan areas (one was well observed near Lorton in the late 1950's and another was killed at about the same time near Fredericksburg).

Many reports of goldens, especially those away from the mountains, turn out to be immature bald eagles. Even the experienced birder is easily confused by the plumage sequences of the bald eagle, which does not attain the distinctive white head and tail until the fourth year. Until that age it is uniformly dark, with irregular white blotches and resembles the young golden, also dark overall, with white in the wings and tail. In silhouette, the two are quite different; the bald eagle has a lot more head and neck, a longer bill and is less buteo-like in proportions.

Once driven away, the golden eagle has shown little tendency to return to former nesting grounds. However, they have reoccupied several eyries in Scotland and there have been recent indications of birds summering in the northern Adirondacks, so there is at least the hope that it may someday return to the misty ridges of the southern Appalachians. Without its regal presence, we are all the poorer.

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National Hunting & Fishing Day September 27, 1975